CONTINUATION

OF

THE REVIEW

OF

"NOTT AND GLIDDON'S TYPES OF MANKIND."

BY

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No. II.

CHARLESTON
JAMES, WILLIAMS AND GITSINGER,
STEAM-POWER PRESS, 3 BROAD-STREET.
MDCCCLV.

CONTINUATION OF THE REVIEW.

We have been so much occupied with unavoidable and melancholy duties, during the few last months, that no leisure hour was afforded us which we could, conscienciously, devote to matters of science. Nevertheless, as we were, in some degree, pledged to continue this subject, we will, on this occasion, offer a few thoughts on two or three of the prominent arguments used by Professor Agassiz, in his article, (Nott and Gliddon's Types, &c. pp. 58, 76,) leaving the more minute examination of his sketch, with the Tableau annexed, to a future occasion.

On p. 74, Prof. Agassiz says: "I am prepared to show that the differences existing between the races of men, are of the same kind as the differences observed between the different families, genera, and species of monkeys or other animals; and that these different speeies of animals differ in the same degree, one from the other, as the races of men—nay, the differences between distinct races are often greater than those distinguishing species of animals, one from the other. The chimpanzee and Gorilla do not differ more from the other, than the mandingo and the Guinea negro; they, together, do not differ more from the orang than the Malay, or white man, differs from the negro. In proof of this assertion, I need only refer the reader to the description of the anthropoid monkeys, published by Professor Owen, and by Dr. Wyman, and to such descriptions of the races of men, as notice more important peculiarities than the mere differences in the colour of the skin." * * * * "I maintain, distinctly, that the differences observed among the races of men, are of the same kind, and even greater, than those upon which the anthropoid monkeys are considered as distinct species."

As Professor Agassiz has merely made an assertion, unaccompanied by either facts or arguments, we may be allowed to produce some facts, and offer some arguments, that are calculated to throw doubts on the accuracy and fairness of the comparisons he has instituted.

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1st. He has produced the chimpanzee and gorilla as [illegible]dence, that these species are as closely allied, as the Mandigo o[illegible]nea negro. With the chimpanzee, (Troglodytes Niger. Geoff,) natu[illegible]s are sufficiently acquainted, and it differs so widely from the or[illegible]outang, or pongo, that it is now arranged under a different genus, (pi[illegible]ecus satyrus). If Professor Agassiz had compared these two orangs with each other, or any two species of the fifty-six well-determined species of monkeys, described by Martin,(Hamilton Smith has given 155) the facts might serve as the foundation for a fair argument. But it should be observed that nothing is known of the gorilla but the skull. In the zoological transactions, Feb'y, 1848, and in April 11th, of the same year, we have a description, by Prof. Owen, of the skulls of this animal, sent by the missionaries, from Gambooa river, West Africa; four skulls had also reached Dr. J. Wyman, of Boston; neither the skeleton or the skin were sent, and we, therefore, know nothing of either the form, the outward appendages, or the colour. This, then, is the species which Prof. A. produces for a comparison. If he had selected any other two species of baboon or monkey, there would be no difficulty on the subject, since the species, arranged under several genera, are more distinctly marked than those of the deer, the antelopes, or the hares.

2dly. His Mandingo and the Guinea negro were domesticated men, and hence subject to all the variations, both in skull and countenance, that are exhibited in domesticated animals. The comparison, to be of any real value, should have been instituted, between his two tribes of negroes, which differ from each other, in skulls, about as much as two neighbouring tribes of American Indians, and any species of animal, subjected to ages of domestication. He has admitted that "the hog descends from the common boar, now found wild over the whole temperate zone, in the old world." (p. 67.) He has admitted the origin of our domesticated ducks, geese, tame pigeon, and the turkey. These are well-known domesticated animals and birds, presenting every variety of form of skull, of size, and of colour. We contend that there are no varieties of men on earth, that present so wide a difference in skull—in skeleton—in form—in external appendages and colour, as in those of the hog, or domesticated pigeon, the varieties of which, he admits, have originated from species that are now living in a wild state. In their feral state, they have undergone no change either in form or colour. It is only when subjected to ages of domestication, that they have assumed all sizes, and colours, and shapes of the skull. When we compare the original wild hog with our long-nosed, gaunt formed and long-legged Carolina grunter—with the short-nosed, short legged, sleek, fat and clumsy Woburn, or Guinea hog, or any of the improved breeds, differing, not only in skulls, size, form and colour, and especially in the covering of hair and bristles, we will not be much surprised to find, that by a similar process of domestication, together with changes of food and climate, man has undergone, and is still undergoing similar changes. The same, and even greater changes have been effected in the domestication of the pigeon. Let us compare the large runt—the carrier—the fan-tail—the pouter—

the nun—the trumpeter—the tumbler—the ruff—and a dozen other striking varieties with the original rock dove, (Columba livia,) and we will not be surprised at any varieties in the human race.

3d. To render the comparison a fair and truthful one, he should have proved that the chimpanzee and gorilla presented the same differences in skull, in form, and feature, as are seen in the individuals among the African tribes. This, he is unable to do. Baboons and monkeys, of the same species, have been known and described for ages, and no changes have taken place. As the species were, when first described, so they remain at the present day. Not so with the Mandingo and the Guinea negro. We think we could show Prof. Agassiz some genuine skulls, together with those of their descendants, which would puzzle him vastly, in designating the tribe to which they originally belonged.

4th. In basing his arguments on the facts which he presented, to prove that certain species of monkeys were as closely allied to each other as are the tribes among the varieties of men, he should have offered, at least, a conjecture, that they had no antipathies to each other—that they met together lovingly—associated with each other, and produced prolific offspring. Prof. Agassiz will not deny that this is the case with the Mandingo and Guinea negro, and many other varieties of men, and we trust we will be able to show, in good time, from reliable statistics, that this is the case with every variety of the human race, and that there is no more sterility in the mulatto, the half-breed Indian, or the product of the mongul and caucassian, than there is in the white or any other race. The gorilla will, probably, when the whole animal is procured and examined by naturalists, be admitted as a distinct species. Another species, the moreo orang, is also given from a single skull without skin or skeleton. The gentlemen who have described the skulls, are known to possess high scientific attainments. When, however, the other portions of the bodies are obtained, it will, no doubt, be discovered, should they prove new species, that the conformation of their skull has indicated such structures in the animal form, as will distinctly separate them from all other species. In the mean time, it would be advisable to base our theories on well-established facts, since these are abundant and within our reach, and not fly to conjectures, which, on a closer examination, will be found delusive. Africa is the land of antelopes and of monkeys. The chimpanzee and the gorilla are described as inhabiting the same region, whilst the orang-outan is found in Borneo. A number of species of baboon or monkey, of several genera, inhabit the same forests, both in Africa and tropical America. Who has ever known them to associate? Who has ventured to peril his scientific reputation, by asserting that new races have been produced by the union of two species of monkeys—nor can a single hybrid, from their native forests, be found in any collection in the world, either living or dead?

5th. As men are greatly influenced by authorities, we are warranted in placing the conjectures of Prof. Agassiz by the side of the personal examinations, the close investigations and the masterly demonstrations of Owen himself, professor in the Royal College of surgeons. We believe he has, without a dissenting voice, been placed at the head

of the school of comparative anatomy and physiology. We do not believe that, in deep penetration—in a thorough knowledge of his subjects—in his powers of analysis—in sound judgment and his long practical experience, he possesses his equal among living men. This opinion is based, not only on the perusal of his voluminous works, on a personal familiar intercourse, and on an attendance on his occasional lectures and his discussions before various scientific associations in Europe, but on the published declarations of the best judges in these sciences. The opinions of such a man, whose independence of mind and conscientious regard for the truths of nature, as they are presented to his mind, will save him from the suspicion of concealing his convictions, to gratify the prejudices of others, are of very great weight in this discussion. Prof. Owen was the first describer of the gorilla, and subsequently assigned the specific name proposed by the gentleman who obtained and forwarded the skulls. He was perfectly familiar with his subject. He had been, for many years, engaged in examinations of the various species of the monkey tribe—arranging them under their several genera, and in pointing out their specific distinctions. We observed, that whenever a new or rare species of the monkey tribe was brought to his notice, his eye lighted up with enthusiasm and he was eager for an examination.

We have an abstract of Prof. Owen's recent lecture on man like apes, in the Ethnological section of the British scientific association, which, we are informed, "drew together an immense audience." The address, in full, has not yet reached us, and we are compelled to refer to the abstract, which we find in several of our daily journals. His able lecture is well-timed, and will serve to disabuse the American public of several strange errors which it was attempted to palm upon their credulous minds.

1. As an attempt had been made to show that there is a connecting link, between the highest order of the quadrumana and the lowest order of the negro, Sir Richard Owen "determined the true zoological characters of the known orang-outans and chimpanzees, as manifested by adult specimens, pointed out the relative proximation of these caricatures of humanity to the human species, and indicated the leading distinctions which separate the most anthropoid of the apes from man."

It would appear almost unnecessary, with the knowledge we possess of man and the monkeys, to waste words in exposing the folly of regarding intelligent, speaking, reasoning man, as in any wise linked with even the highest order of the monkey tribes. When men, in order to show the gradations between man, the negro and the monkey, place the figure of the chimpanzee in a range with the Apollo belvidere, and in the central connecting link, a personification of ugliness in the negro visage, whose counterpart it would be difficult to find, it is sufficiently evident they aim rather at effect than truth. Even in his physical conformation, in his osseous frame, and in his attitudes, the monkey is infinitely removed from any variety of the human race. Man walks erect, and were he to attempt the quadrupedal attitude, his head could not be sustained without great inconvenience and pain. On the other hand, the ape

tribe, including the orang-outan, chimpanzee and gorilla, are organised as climbing animals—they totter when they assume an erect posture on the ground, and are only at ease among the branches of the trees. The organization of man enables him to be at ease in a standing, sitting, and lying posture, whereas, the ape is obliged to climb, to sit, and to rest, in very different positions. Adrian Spigel says: "solus homo ex omnibus animalibus commodè sedet. Cũi carnosæ et magæ nates contogere, et pro subsellio, pulvinarique tomento repleto enserviunt, ut citra molestiam cedendo, cogitationibus rerum divinarum animum rectius applicare possit."

Prof. Owen, after having referred to the higher orders of the monkey tribes, then proceeded to consider man and his varieties. He used the following expressive and emphatic language:

"Entering, then, upon the subject of the varieties of the human race, he defined the degree in which the races differed from each other in colour, stature, and modifications of the skeleton. The unity of the human species is demonstrated by the constancy of those osteological and dental characters, to which the attention is more particularly directed in the investigation of the correpsonding characters, in the higher quadrumana. *Man is the sole species of his genus, the sole representative* of his order. He has no nearer physical relations with the brute kind, than those which arise out of the characters that link together the great group of placental mammalia called "unguiculata."

Here, then, we have the matured conviction of the greatest anatomist of any age, who was familiar with every bone and muscle in the varieties of the human family—whose extensive museum was crowded with the skulls and skeletons of every tribe of man—of the varieties in domesticated animals and birds, and the skeletons of wild animals. The organization of these had engaged the study of his whole life, and he records the rerult of his judgment, as similar to the conclusions of Cuvier—of the two Humboldts—of Lepsius and Bunson—of Pritchard—of Martin and Latham—and the most eminent naturalists of every country, that "*Man is the sole species of his genus, the sole representative of his order.*"

Prof. Owen has recorded his opinion on another important subject. Man is represented, in the scriptures, as the latest creation of the Deity. An attempt has recently been made to show that man was not the last, but that his remains were found in the lower strata, evidencing that he existed before the creation of the present races of animals. Prof. Agassiz speaks of a skeleton, in his possessien, 10,000 years old—Dr. Usher, of a sub-cypress Indian 57,000 years old—and Dr. Morton is reported as having predicted that man "walked the earth with the megalonyx and paleotherium." The public is anxiously waiting to hear, that specimens of these ancient species of men are placed in some public museum, for the inspection of the curious, and the description by men of science, of these new species of men, as they must, undoubtedly, be, if they have not, by some accident, strayed from the upper surface into these lower deposits. Another fact must not be lost sight of. In the lower strata where animals have existed, they have left behind them traces of their existence, in the fossil state, by many teeth and skele-

tons. Wherever man has existed, he has left other evidences than his bones, to mark the period when he lived and acted. He is a predatory animal—he invents expedients to supply himself with food and clothing. He is obliged to have implements, however rude, for agriculture, for culinary purposes, for procuring his game and warring with neighbouring tribes. Man, living on the surface of our earth, however savage, has left many traces of his life and actions in the implements he used. There are a million of arrow-heads, spears, stone hatchets, &c., found, to one human skeleton. The whole surface of the earth is covered with monuments, indicating the existence of its early inhabitants. If man existed in a period anterior to the present races of animals and men, is it not very strange that in those lower formations, where so many hundreds of specimens of its ancient animals are d ig up in marl beds and morasses in a single rood of earth, neither the remains of man or any traces of his works have ever been detected, in such a position as to produce conviction, that they were not placed there by accident or design?

Let us now hear the conclusions at which Prof. Owen has arrived on this subject.

"Human bones have been found in doubtful positions, geologically considered, such as deserted mines and caves, in the dedritus at the bottom of the cliffs, but never in tranquil, undisturbed deposits, participating in the mineral characters of the undoubted fossils of these deposits. The petrified skeletons in the calcareous concretes of Guadaloupe, are of a comparatively recent origin."

Men, professing to be governed by the laws of science, have often given pain to the believers in the revealed will of God, by the expression of infidel sentiments. This is rather an evidence of their want of knowlege, than of any error in the revelation contained in the scriptures.

It is refreshing to hear the conclusions to which the mind of this, the greatest of comparative anatomists, has been brought, by the study of nature, compared with the revelation given by the Creator of man and the Author of nature.

"Thus, therefore," concluded the Professor, "in reference, both to the unity of the human species, and to the fact of man being the latest, as he is the highest of all animal forms upon our planet, the interpretations of God's works coincide with what has been revealed to us, as to our origin and zoological relations in the world."

Martin, in his recent admirable work entitled "The Natural History of Man and Monkeys," has faithfully and scientifically described all the different species of monkeys, under their different genera, and given them their true specific names, but when he comes to the bimana--he says: "*This order consists of but one species—Man.*"

We cannot but believe that the attempt of Prof. Agassiz to prove the varieties of men to be of distinct species, by instituting a comparison between the different species of the wild monkey tribe, has not only proved a failure, but is calculated in the end to give a death blow to his whole theory. If he had compared man with the domesticated animals that have accompanied him over the world, even with those only whose wild origin and change of form and colour he admits as the

effect of domestication, his arguments would have been legitimate and we would cheerfully have met him on that ground; as it is, we have only to regret that he has attempted to support an erroneous theory by an illegitimate comparison.

It should be remarked, in this place, that those specific distinctions which separate the species of monkeys from each other, apply to every species of quadruped, bird, fish and reptile. Wild species do not change in their characteristics or multiply with each other, producing hybrid races. The descriptions of Linnæus and of the Roman writers that preceded him are as true to nature now as when they were first penned. We will show on another occasion, if we have not proved this already, that domesticated species partake of the same character—that two species of animals may produce a hybrid which is organically incapable of producing a race—that a horse remains a horse through all his variations—a goat a goat, a sheep a sheep, a hog a hog, and a dog a dog, and that no mixture with an other species can be perpetuated into a race.*

On page 72, Prof. Agassiz, aware of the powerful arguments that may be produced from the affinities of the different languages of the varieties of men—a subject on which philologists, and among the rest Lepsius, we are informed, are now industriously engaged—states what he supposes a fact in the history of the notes of animals and birds. He says: "Among vociferous animals, every species has its peculiar intonations, and the different species of the same family produce sounds as closely allied, and forming as natural combinations as the so-called Indo-Germanic languages compared with one another. Nobody, for instance, would suppose that because the notes of the different species of thrushes, inhabiting different parts of the world, bear the closest affinity to one another, these birds must have a common origin; and yet with reference to man, philologists still look upon the affinities of

* As the internal organization of the gorilla is, as yet, unknown, let us draw a comparison between a few other species that are closely allied to each other.

The orangs, men of the woods, or anthropoid apes, are approximating species. The orang-outan has twelve ribs on each side—the chimpanzee, thirteen.

The following are the differences in the vertebræ of several species.

Species.	*Dorsal vertebræ.*	*Lumbar do.*	*Sacral do.*	*Caudal do.*	
Orang-Outan,	12	4	5	3	
Chimpanzee,	13	4		7	Sacral & caudal.
Hoolock Gibbon,	13	5	4	3	
Capuchin Monkey,	12	7	3	21	
Probosis Monkey,	12	7	3	23	
Bonnet Monkey,	12	7	3	20	
Mandril Baboon,	12	7	3	20	
Charmeck-Spider Monkey,	14	4	3	32	
Harlans Gibbon	14	5	5	5	

The only two species possessing the same number of vertebræ that we can find alike, are the bonneted monkey (Colobus pileatus) and the black fronted Lemur (Prosimia nigrifrons)—but they belong to different genera—the former having four cutting-teeth above and four below, making, in all, 32, whilst the latter has four cutting-teeth above and six in the lower jaw, numbering 34 teeth in both jaws.

There are many other specific differences among the quadrumana—differences n teeth, some of which, like those of the black orang, who uses them to unhusk

languages as affording direct evidence of such a community of origin among the races," &c.

In a recent favourable review of Nott and Gliddon on Types of Mankind, signed A. L., the writer (who if he had not spoken in rather extravagant praise of himself and his own work, one might conjecture from the similarity of thought and style, and the reversed initials to be Agassiz himself,) makes use of the following language :—"There are blackbirds in America, and black birds, but of a totally distinct species, in Europe. The blackbirds in America have not been taught to sing by the blackbirds of Europe, and yet their note is similar, because their throats are alike"—p. 288.

This would be a good argument if the facts were as he has presented them. We have no doubt he has expressed his honest convictions, but we are equally well convinced that if Prof. Agassiz and the reviewer, whoever he may be, had ever listened to the notes of these black birds as they call them, and compared them with each other, they would have hesitated before they committed themselves in making so heedless an assertion. We can only say that if a teacher of music could not instruct his scholars in the imitation of sounds, better than the black bird of Europe has taught, or can teach the black birds of America, he would either be dismissed for incompetency, or his pupils for stupidity. We contend that every species of bird has its own peculiar note, and

the cocoa-nut, are enormously large ; there are, also, differences in size, colour, length of arms, and in the presence or absence of tails and cheek pouches. But we here perceive that those most nearly allied, differ widely in their vertebræ. The above is the result of the examinations made at the Zoological Society of London, and their accuracy may be depended on. We have seen no account of others.

The following is the osteology of the three principal varieties of man, under which Cuvier arranged the human family.

No. of teeth.	*True ribs on each side.*	*False do.*	*Dorsal vertebræ.*	*Lumbar do.*	*Sacral do.*	*Caudal do.*	*Ag'gate bones in skeleton.*
Caucassian, $\frac{\text{Above } 16}{\text{Below } 16}$=32	7	5	12	5	5	4	240
Mongolian, $\frac{\text{Above } 16}{\text{Below } 16}$=32	7	5	12	5	5	4	240
African, $\frac{\text{Above } 16}{\text{Below } 16}$=32	7	5	12	5	5	4	240

The above organic structure appears in every variety of the human race. How, then, can it be asserted that any two species of monkeys approach as near to each other, in structure, as the varieties of men that are all allied in every characteristic that constitutes a species? The varieties of man differ even less than the varieties of domesticated animals, and are far more uniform in size. There are black, and brown, and white breeds, in all the varieties of domesticated animals, as well as of poultry. There are greater differences in the skulls of the various breeds of domestic cattle, sheep and hogs, than in those of men. There is in the sheep and goats every gradation in pelage—from the coarse, straight hair of the common goat, and of the Nubian sheep—the latter introduced into Cuba, and now by Dr. Davis, into Carolina—to the softest curled wool of the merino sheep and the cashmere goat. The intelligence of the Arabian horse or the English racer is as far superior to the dray-horse, and that of the spaniel to the bull-dog, as that of the white man is to the negro.

that the notes of species of different genera often bear a closer resemblance to each other than those of the nearly allied species. We admit that the peculiarity of voice in birds and animals is dependent on the structure of the throat—the organization of the larynx—and of the inferior ligaments of the glottis. But that these are very differently constituted in birds and animals, even of the same genus, may easily be discovered by the ear without resorting to the delicate and difficult process of anatomical investigations. We are free to admit that we are not a connoisseur in music, yet we have found no difficulty in recognizing any of our known species of birds from their notes. When looking for new or rare birds, during the last forty years, our constant habit was to listen for the notes of the male. It saved us from many a long walk, and enabled us to find what we wanted without undue exertion. We were not a month in Europe before we were able to recognize the different species of their common birds from their distinct notes. Nor do we regard this as a peculiar faculty imparted to one and denied to another. It only requires close attention and a little practice. In directing the attention of collectors of specimens to this subject, we found that they soon fell into the habit of passing by the common birds which were not wanted, and of listening for the notes of new or rare birds. Mr. Audubon, who was our frequent companion in these rambles, at first expressed his doubts whether species could be detected as well by the ear as by the eye, but he soon gave in his adhesion, and was made sensible of the advantage of learning to distinguish the various species of birds by their peculiar notes.

Returning to the thrushes and the black birds, we will barely allude to the awkward and unintelligible designation of the species. The black bird of Europe is a Thrush—(Turdus merula.) The black birds of America are in no wise related to the thrushes, but belong to other genera—Quiscalus, Icterus, &c. Presuming, however, that the comparison was intended to be drawn between the European black bird, and the American thrushes, we will now briefly inquire how far the statements of Agassiz and his reviewer are correct, when they tell us that "their notes are similar?" We do not hazard a mere conjecture, when we affirm that we know no family of birds in America whose notes differ so widely from each other, as those of the thrushes. The notes of all our Atlantic species, with which naturalists are most familiar, are so distinct and peculiar that a child with a little practice would learn to distinguish them from each other. What resemblance is there between the mewing of the cat bird and the polyglott notes of the mocking bird? How does the whistle of the American robin compare with the clear thrilling notes of the wood thrush, the varied warbling of the Hermit thrush, or the quick shrill hollow tones of Wilson's thrush? The notes of several of these bear a greater resemblance to species of other genera, than to species placed by their side under their own genus. It is true a few of our species have imitative notes borrowed from their neighbouring songsters of the woods and fields. The mocking bird is eminently a mocker—the brown thrush and cat bird in a lesser degree—the jay makes awkward demonstrations

at imitating the kee-o of the red shouldered hawk—and the crested titmouse sometimes vociferates the note of whip-tom kelly, which seems to have been borrowed from the white-eyed flycatcher. But all these species have native notes of their own, by which they are easily distinguished from all others. A single call note of the European black bird bears some resemblance to that of the American robin, whilst his whole song is widely distinct, as may be easily ascertained by listening to them in contiguous cages, as we have often done in Charleston. A single note is often heard from birds that resemble the notes, not only of the species of other and far removed genera, but of those of quadrupeds. The cluck of the chuck wills widow, as well as that of the American cuckoo or rain crow, are very similar to the call note of the ruffed grouse, and this again reminds us of the chipping Squirrel, (Tamias lysteri.) Nuttall, in a letter to us, says of the Little Chief Hare, (Lagomys princeps)—"I heard a slender but very distinct bleat, so like that of a young kid or goat, that I at first concluded it to be such a call. * * At length I discovered that this little animal was the real author of this unexpected note." We could, if it were necessary, point out many other resemblances between a single note of birds or animals of very distinct families, to prove that they bore a greater resemblance to each other than they do to those of kindred species. As an evidence, however, that "their throats" are not alike, we repeat what we have said before, that they all have other notes by which they may easily be known from each other.

The immense family of warblers in the United States, with bills and toes, and size of body very similar, have in each species so distinct a note, that we are never at a loss to recognize the males of each species without the trouble of searching for them. The same may be said of the family of sparrows; and how different is the note of the Baltimore oriole from that of the orchard oriole of the same genus.

That the notes of animals and birds are natural and not acquired, and that they are connected with the internal organization of their vocal organs, we have satisfactorily ascertained by keeping them in confinement separated from the slightest knowledge of their own species. The red squirrel uttered its querulous chick-a ree, the grey squirrel its quack-quack-qua, and the ground squirrel its monotonous chip-chip—although neither of them had ever heard the sound of the parent's voice. The common partridge, which was raised from the egg under a hen in the city, where it never heard the call of any of its species, uttered its cheerful notes of Bob White on the following spring as distinctly as any of its tribe in the *fields*. The same results attended our experiments on the Towhee bunting, the Bob-o-link or rice bird, the brown thrush, and several other species.

As each species of bird or quadruped has, therefore, unquestionably its own distinct notes, separate from all others, which is natural and not acquired, and as these natural notes are as certainly produced by the internal structure of the organs of the voice, the question now arises in what manner will this doctrine apply to the organs of the human voice? Among the various tribes of men, the closest investigations of anatomists and physiologists has not been able to detect any

greater difference in the vocal organs between different varieties, than in individuals of the same variety. If the tribes of men are of different species, why do they not exhibit by their organs of sound those differences that pertain to the species in all other animals?

Again it may be inquired wherein do the varities of men differ in the enunciation of sounds? The varieties the farthest removed from each other learn to speak any language to which they are trained. In our native town in Rensselær County, New-York, we had in our boyhood a settlement of Germans on the one side and of Hollanders on the other, intermingled with those who spoke the English language. Our slaves who were rather numerous, and were of unmixed blood of the second and third generation from Africa, familiarly spoke the three languages then in use in the neighbourhood. We observed in the market at York, Pennsylvania, that the negroes spoke the German patois, such as is heard among the Pennsylvania farmers. In Surinam and the Cape of Good Hope, the negroes speak Dutch—in Cuba Spanish, and in St. Domingo, and to a considerable extent in New-Orleans, French. We met a young negro in England who had resided from early life in Ireland, and he had as broad a brogue as any Pat in the Island; and a negro of London used the word " at" instead of hat, like the cockney. The negroes among the Cherokees and Seminoles, speak the languages of the tribes among whom they reside. If sent when young to China, they would speak no other language but the Chinese, and the descendants of the blacks sent from America with the English language to Sierra Leon and Liberia, will be very apt to acquire the native tongues of their ancient African forefathers.

Having said thus much on the adaptation of all the races to acquire various languages, let us next inquire how they are constituted in regard to the power of song. Some nations such as the Germans, the Swiss and the Italians, are more generally devoted to music than others, because it is a part of their education and by this means the love of music has been generally diffused. Every nation and every tribe however possess the power of song and evince their love of music in a thousand ways. We have listened to the war and hunting songs of the American Indians—the love ditties and the spiritual hymns of the negroes, and the monotonous jargon of the Chinese mongolian. A band of music in our streets will at any time draw together a crowd of negroes, excited to the highest pitch of enthusiastic joy. Their singing at funerals and at prayer meetings evidences a whole-souled love of the excitement. The airs played at our operas reach the greedy ears of the listening outstanding negroes, and are whistled in the streets on the following day by many an idle black urchin; and the black servant maid entertains her companions in the kitchen with the airs played by her young mistress on the piano, before the latter is herself fully acquainted with them. And what is this music and what the character and the language of these songs? Have they been imported from Africa and is it the music of the mandingo or the Guinea negro? No they have adapted the airs sung in the operas at Paris, Rome and Berlin. In their devotions they sing the hymns of Watts & Wesley, expressed in the English language. There are at this day according to

the census of 1850, 3,638,808 of the descendants of the African race in the United States, and nine tenths of them are of unmixed African blood. What has become of the language of their forefathers? There are perhaps not a dozen that understand one word of it. They have adopted the language and sing the songs of the people with whom they live. They have also commingled with the whites, and for weal or woe, produced mixed breeds which have multiplied at a rapid rate.

Let us now enquire what the thrushes have done or any other species of bird in this wide earth. Have they multiplied or in a single instance mixed with neighboring species? Above all, have the notes and the songs of one species been converted into those of another? The American thrushes breed in the same vicinity in our temperate climate and retire together to warmer regions during winter. Has one species ever communicated its notes and its song to its neighbour of another tribe? More than three and a half millions of Africans have forgotten their native language and their songs and adopted those of another people speaking another language, singing in a different style and playing on different instruments. They have laid aside their native tom-toms and adopted the drum, the fife and the fiddle. Suppose we were to import from Europe to America three or four millions of young black birds, give them our robin or any of our thrushes as foster mothers and naturalize them in our country, would they lose their native song and adopt that of any other thrush in the land? Would not nature assert its inherent claim? Would not the organization of their throats deny them the power of singing a new "song in a strange land?"

We now submit to enlightened naturalists 1st, whether "the notes of the different species of thrushes inhabiting different parts of the world, bear the closest affinity to one another," and 2nd, whether the difference in the structure of the languages used among the races of men, may be legitimately assimilated with the notes of closely allied thrushes or those of any other species of birds?

On the other hand we advance it as one among the many powerful arguments in favour of the unity of the human race that different species of birds, however closely allied, never associate with each other, or produce intermediate races, whilst every variety of the human species produce fertile progeny; whilst species of birds and animals although belonging to the same genus, never relinquish those notes which are natural to them and which belong to their organization, and never adopt the notes of another species, every variety of men are known to have given up their native languages and the songs of their native lands, and adopted the languages and the songs of their adopted countries. Hence we argue, that whilst the thrushes and other birds are true species, the different tribes of men are only varieties and not distinct species. In the human race one variety can be converted into another by amalgamation and entirely lose its original identity—it can lose its native language and song and slide into the language and song of another race, and we know that this is not the case with any two species of quadruped or bird, however closely allied.

Having, we think, shown clearly that the notes in each species of wild quadruped or bird are distinct from those of other species, although an individual may sometimes be found with a louder cry or a more melodious song than others of the same species, the question naturally arises, what effect has domestication produced on the voices among the different varieties in the same species?

Domestication produces not only striking changes in size and colour, but in the organic structure of the limbs and shape of the skull, but how does it effect the voice? Large animals in any variety have louder voices because their throats are larger, and in this particular their organs of sound may be compared to the pipes in an organ—the smallest pipes sending forth the shrillest and the largest the fullest notes. In the same manner from Seabrights small bantam—the size of a pigeon, through the various sized breeds of fowls, up to the long legged malay and gigantic shanghai, all the gradations of sound may be heard from the shrillest treble notes of the bantam—through the tenor of the common fowl up to the bass of the Shanghai and bahram pooter. Yet the males of every breed of fowls all have the crow of the cock, preceded by the flapping of the wings, differing in these particulars very widely from the wild pheasant, or any other species of the gallinaceous tribe;—the hens also in all the varieties cackle and cluck in the same manner. The same characteristics may be observed in all the varieties of the common goose up to the large Bremen goose. The voice of the Chinese goose may be easily distinguished by its more musical tones, and the honk of the Canada goose designates the species as its sounds come gliding over the lake at the distance of a mile. So also every breed of English ducks have the quack of the original wild duck and the shrill guttural whistle of the mallard. The tame male turkey, whether he be white, red or tufted, gobbles precisely like his ancestor in the forest, and the call notes of the hens are the same. The hoarse screams of the peacock and the monotonous and never ending *come-back* of the Guinea hen, whether the birds are white or black, are precisely like those of their wild progenitors. We have kept in the same aviary, the American wild pigeon, the Barbary, the turtle dove of Europe and the American species, the white-headed and the blue-headed pigeons of Cuba and the wood pigeon of Europe—their notes all differed so widely from each other that we required no aid of the sight to know the different species—on the other hand all the different varieties of the common pigeon cooed so similar that there was no other difference than that which might be expected from the different sizes of the birds.

Among domesticated quadrupeds, the same similarity exists in the voices of the different breeds of the same species. The horses, from the great dray-horse to the Shetland poney, neigh alike when they are in a good humour, and give the same angry squeal when they are about to use their teeth or their heels, in a rage. How widely different are the notes of the kindred species—the zebra, the hemionus, and the jack-ass. All the varieties of the common sheep bleat in the same way. The lowing of the various breeds of common catle is similar—and the roaring of the bulls differ not so much in manner as in the capacities of the voice. How widely different are the bellowings of our wild bison, or

the hoarse grunt of the water oxen, both of which may be heard on the plantations of Dr. Davis, near Columbia, S. C., and the latter also at Mr. Williams Middleton's, in St. Andrew's Parish.* Every variety of hog has its lazy grunt, in a state of rest or enjoyment, and its angry squeal when in pain.

These similarities, in the voices of every variety of the same species, present additional evidences that they have the same origin.

The voices of hybrids partake of the notes of both their progenitors. The tedious, difficult, and very uncertain process of procuring hybrids, between the canary bird and goldfinch, has sometimes resulted in obtaining a mule bird with sprightly notes—this race of birds could, however, not be kept up, and, with the death of the bird, this new breed of songsters was at an end. In general, however, we have observed that hybrids are as imperfect in voice as they are in sexual organization. The braying of the mule is unlike any thing earthly; the mongrel duck is nearly mute, and the cry of the rare hybrid, between the Guinea hen and common fowl, is a queer, and seldom heard cackle. We preserved one for several years, and scarcely heard the sound of its voice.

Let us now apply these facts to the human species. What kind of a voice would be uttered by the hybrids between two distinct species of men, remains to be determined when two species are found. Thus far the voices of all are similar, and can be modulated to speak every language and sing every song. We trust it will not be necessary to prove that languages are continually changing. The Latin, of the Romans, has ceased to be the spoken language of any one people—it cannot be understood by the Italian or Spaniard. The English is not what it was the days of Chaucer and Shakespeare—the Dutch—the German—the

* An allusion to the water ox reminds us of another fact, which we will notice more in detail, under the head of hybridity.

A pair of Brahmin cattle and two pair of water-oxen, were imported by Dr. Davis, of Columbia, in 1849; the former, as admitted by naturalists, is a variety of our common domesticated cattle—the latter, of the eastern buffalo. The new theory, that our domesticated cattle have proceeded from a commixture of different species, was now to be tested. The male and female of the Brahmin cattle were placed in the same field with many of our common cows. The female Brahmin cow has produced a calf each year—and, at the same time, as we are informed by Colonel Hampton and Dr. Davis, the descendants from this same bull, by our common cows, amount to more than 1,500, having greatly improved the stocks of cattle in Carolina, Georgia, Kentucky, and Louisiana. In the mean time, what has been the result in their efforts to produce hybrids from the male of the water cattle? The female had a calf annually—the male was running in the immense inclosure of Mr. Middleton, with from 1,000 to 1,500 common cattle, for several years past, and not a single hybrid has been produced. The same was the result at Dr. Davis' plantation. The water bulls were always ready for a battle, but for nothing else. There is another experiment going forward, at the latter place, which, we think, is calculated to peril Mr. Brown's new theory of designating species by the hair. Dr. Davis imported the Cashmere, Thibet shawl, the Malta milking, and the large pendulous eared goats of Syria—admitted by all naturalists, Hamilton Smith, and Dr. Morton, included, to be varieties of the common goat. The product is now over 300. By interbreeding, the coarse hair of our common goat has been converted into wool, as fine as that of the cashmere, and by crossing the Thibet with the Cashmere goat, the long coarse hair, which covers the down of the former, has been converted into the soft wool of the cashmere goat.

Swede—and the Dane, no longer understand each others languages—yet they are the descendants of the Saxon—all their dialects can be traced to one original root. Able philologists are now at work in tracing all the languages of the earth to one origin, confident that, by this means, they will be able to work out the problem of the unity of the human species. Certain it is, that every variety of man will, when placed in childhood among any other people, whether it be in Africa, New Holland, the Fegee Islands, or any of the Indian tribes of America, learn to speak their language and forget that of their forefathers. The conformation of their organs of sound must therefore be alike. Hence it is not surprising that the recent advocates for the plurality of races, finding such a similarity in all that constitutes a species in every tribe of man, have been driven, as a last resort, to the theory that the same species of man might have been created as varieties in different parts of the world—a theory broached, long since, in Germany, and which, we supposed, had been set at rest half a century ago. Any new theory, moreover, that requires a new nomenclature and a new and unheard-of definition of species, must be looked on with suspicion; especially from such naturalists as Morton and Agassiz, who were content to describe all their species by the established rules which governed the naturalists of the world, until they found themselves hemmed in with difficulties in attempting to establish a new theory.*

We yet crave the indulgence of our Editors and the patience of our readers, whilst we notice the summing up of Prof. Agassiz's article, in page 75–6, and the charge which he has made against the believers in the unity, of arguing in favour of "the Lamarkian development theory." He says "there is no evidence whatever," that mankind originated from a common stock, and that, because there is a diversity among animals, "it follows, that what are called human races, down to their specialization as nations, are distinct primordial forms of the types of man."

Professor Agassiz is fully aware that the doctrine of the unity of the human race was an established belief among men of science before either of us were born. Therefore, the speculators in a new theory, instead of requiring the believers in an adopted theory to prove that there

* Dr. Morton finding that the generally adopted definition of species would overturn his whole theory on hybridity, defines species by a "*primordial* organic form." He admitted "a difficulty presents itself in the outset in determining what forms are primordial." Dr. Nott corrects what is faulty in this definition by giving another "species—a type or organic form that is permanent, or which has remained unchanged under opposite influences for ages." He cites as examples, the Arab, the Egyptian and the negro, the greyhound, the turnspit and the wild dog, on the monuments of Egypt. Hitherto naturalists in the designation of species have been governed by those characters stamped on them by the hand of the creator; now, however, they are sent on a pilgrimage to Egypt, and if the clumsy Egyptian artisan has given us a representation of a greyhound, whose ears and short turned up tail might be mistaken for a rabbit—a turnspit that bears some resemblance to the Chinese pig, a Persian wild dog, that might be classed under several genera, of dog, cat or lamb, and figures of the heads of men and women, whose representatives it would be difficult to find among any of the present known varieties of men, they will be involved in inextricable difficulties. If naturalists cannot go to Egypt to examine the monuments, or if the sculptor was a clumsy workman, they will be left without a guide in the examination of species.

was originally no diversity in man, are bound to afford those evidences which would satisfactorily prove that these diversities existed from the beginning. The burden of proof now falls upon them, and, to require us to prove the contrary, is, to quote his own language, "begging the question." It behoves them to prove that the Japetic,* Mongolian, African, Malay, and American stocks are not varieties, but original species. When they are able to detect a single tooth, vertebræ, or muscle, in one race, that is not found in every other—when they can clearly prove that the issue between these races is not prolific—when they prove that they differ in conformation of their organs of speech, and that one race is incapable of laying aside its native speech and song, and acquiring those of another, we will regard them as legitimate arguments in favour of their new theory. Conjectures and speculations will not be satisfactory—we call for sound reasoning based on unquestionable facts.

In insisting on the doctrine, that animals and men have run into varieties in their domesticated state, we have asserted no more than Aggassiz, himself, has admitted. If the hog, the merino sheep, the pigeon, &c., have produced the breeds that have originated from their several wild stocks, all of which professor Aggassiz has published as the result of his investigations, then there is no difficulty in accounting for the origin of the different varieties in the human race.

What reasonable grounds then we ask are there for charging the advocates of the unity with believing in the absurd theory of Lamark. This idle charge was made against us before in this journal which also contains our answer. We have been so fortunate as never to have been inveigled into a belief of any of the many humbugs of the day. The notions of Lamark, of Oaken, and of Vivian, the author of the vestiges, and the believers in the development system, have appeared to us too absurd to require a serious refutation. The theory that the surface of the earth was at first covered over with mucous, which by the power of galvanism called forth animalculæ—that these became in successive developments, worms, reptiles, fishes, and warm blooded animals; and, finally, that the monkey was elevated into a man, can dispense with the creative power of God, and is best adapted to the views of an atheist. We believe in species as having originated from the hand of the Creator, and that they continue to the end of time to bear the characteristics of the original creation. That any change which domestication may produce does not destroy the marks of identity. Hence we have opposed and ridiculed the notions of Hamilton Smith, adopted to a certain extent by Morton, and rather too strongly countenanced by Agassiz, that a commingling of two or three species of animals will produce another, which will bear all the characteristics of a new species. We shall pass by this subject, with the simple remark that such a charge against us who have openly and fearlessly supported and published our

* "Japeticus, not in allusion to Japhet, the son of Noah, but to Japetus (audax Japeti genus. Horace.) whom the ancient classics regarded as the progenitor of the race inhabiting the western region of the world."—*Martin's Natural History of Man and Monkey*, p. 217.

views on the characteristics of species, might have been looked for from any other man rather than Agassiz. It is calculated to place his opponents in an unfair position, and from its absurdity to weaken the cause he advocates.

In our leisure moments, which have recently been doled out to us very sparingly, we will give our views on the characters of species and on Agassiz's "Zoological provinces of the animal world and their relation to the different types of man."

In conclusion, we may be allowed once more to express a hope that naturalists and men of science who write on this subject, will in future confine themselves to their legitimate calling, and leave theologians to discuss the scripture question. Formerly the clergy were told by men of science, "leave us alone in our pursuits and we will not meddle with the scriptures." Of late, however, they have struck out into a new path, and commenced a rude and reckless warfare against the Bible and the clergy. When a clergyman comes forward professing to take them at their word, to leave the Bible alone and discuss the whole subject on the principles of science, they immediately commence on the scripture question. This was the case both with Morton and Agassiz. When we were thus compelled in self-defence to quote the opposite scriptural passages, they conceived they had fairly diverted us from the path of discussion which we had proposed to pursue. They arrayed the passages we had quoted as a warrant for them to become expounders of scripture. Naturalists are, at best, unpractised theologians. They may aid in making sceptics in religion, but they are injuring the cause of true science. Then come the subalterns in the "combination," and exhibit to the public specimens of their courtesy, their veneration for the Bible, and their love for its ministers. Have they permitted themselves to be misled by the idea that all clergymen were so timid, so frightened at the rod which was suspended over their heads, that they would sooner surrender their judgments and their consciences, than submit to the bitter personalities of their opponents? We were not without a hope that A. L., in the Southern Review for October, would at least have afforded us some evidence that the views of Gliddon were unpalatable to his scientific appetite. That he who professed to give an honest review of a book should not have omitted to stigmatize the rude attack upon us, as unjust as it was uncourteous. We could not but think that the article of Agassiz, couched in the language of science, but erroneous, as we are prepared to prove, was entirely out of place in such a work as Nott and Gliddon's "types." We feel concerned for his well-earned scientific fame when this excrescence is borne to Europe, supported by the arms of Nott and Gliddon. In regard to personal attacks, we are preparring to discipline our feelings somewhat in unison with those of an old clergyman, of whom we have somewhere read an account. In reasoning with a young man, the latter lost his temper, and for lack of argument spat in his venerable opponents face; when the latter coolly wiped his face, with the remark, "young man that was a digression—now for the argument."

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